

## STATEMENT OF WORK

I. Title: Acceptance Testing and Distribution of Quartz and Glass Fiber Filters

II. Background:

The U.S. Environmental Protection Agency (EPA), Research Triangle Park, North Carolina is responsible for procuring, testing, and distributing quartz and glass fiber filters of high purity to the State/local air pollution control agencies. The quartz filters are used with a size selective sampler (SSI) to collect PM-10 (particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers) samples. The glass fiber filters are used to collect Total Suspended Particulates (TSP), and these filters are also used for lead and trace metal analyses. This process assures filters with uniform characteristics and known quality assurance testing for the national particulate networks.

EPA obtains the filters from a filter manufacturer and has them shipped to EPA for acceptance testing. If the acceptance testing confirms that the filters meet EPA's specifications for physical and chemical properties, the EPA instructs the independent laboratory to ship the filters to the State/local air pollution control agencies.

III. Statement of Work:

A. Quartz and Glass Fiber Filter Selection and Testing

The Contractor shall use the following test methods to check the filters.

- American Society of Testing Methods (ASTM) Method D645-92 (Standard Test Method for Thickness of Paper and Paperboard)
- Brittleness Test for Quartz and Glass Fiber Filters
- ASTM Method D828-93 (tensile Properties of Paper and Paperboard Using constant-Rate-of-Elongation Apparatus with Attachment for use on Hi-Vol Filters)
- Filter Flow Rate Acceptance Test Procedure
- Atmospheric Research and Exposure Assessment Laboratory (AREAL) Visual Inspection Test for Quartz and Glass Fiber Filters
- ASTM Method D2986-91 (Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Diethyl Phthalate Smoke Test))
- Reference Method for the Determination of Lead in Suspended Trace Particulate Matter Collected from Ambient Air (Appendix G 40 CFR 50), or equivalent

## B. Glass Fiber Filters

The Contractor shall test 350 filters from each batch of glass fiber filters, where a batch is defined as the filters to be used in one calendar year, for acceptance testing by the physical and chemical test described below. All 350 filters shall be subjected to the visual inspection tests and then a certain quantity (specified in chart) shall be subjected to the other tests described below.

### 1. Physical Properties

The number of filters to be tested and the physical properties to be measured are given below:

				All Filters Must Meet the Following Dimensions
Characteristic	No. of Filters	Test/Analysis Method (Reference Number)	Maximum	Minimum
Length, Width	50	Rule, Graduated to 1/16" divisions, or suitable template	8"+1/16" 10"+1/16"	8"-1/16" 10"-1/16"
Thickness	75	ASTM Method D645-92	0.60 mm	0.30 mm
Brittleness	50	Brittleness Test for Fiber Filters	No crack larger than one inch	
Tensile Strength	75	ASTM Method D828-93	None	500 g
Flow Rate	75	EPA Flow Rate Acceptance Test	1.75 m <sup>3</sup> /min	1.34 m <sup>3</sup> /min
Retention	50	ASTM Method D2986-91	None	99.95%
Visual	350	AREAL visual Inspection Test Procedure a. Defect Filters b. Reject Filters	70 20	None None

### 2. Chemical Properties.

a) Lead Content. No filter from a total of 50 filters shall contain more

than 0.25 milligrams of lead when the filter is analyzed as per the EPA Reference Test Method for Lead 40 CFR 50.

### C. Quartz Fiber Filters

525 filters from each batch of quartz fiber filters, where a batch is defined as the filters to be used in one calendar year, shall be selected for acceptance testing by the physical and chemical tests described below. All 525 filters shall be subjected to the fiscal inspection test and then a certain number shall be subject to the other tests described below.

#### 1. Physical Properties

The number of filters to be tested and the physical properties to be measured are given below:

			All Filters Must Meet the Following Dimensions	
Characteristic	No. of Filters	Test/Analysis Method (Reference Number)	Maximum	Minimum
Length, Width	50	Rule, Graduated to 1/16" divisions, or suitable template	8"+1/16" 10"+1/16"	8"-1/16" 10"-1/16"
Thickness	75	ASTM Method D645-92	0.60 mm	0.30 mm
Brittleness	50	Brittleness Test for Fiber Filters	No crack larger than one inch	
Tensile Strength	75	ASTM Method D828-93	None	200 g
Flow Rate	75	EPA Flow Rate Acceptance Test (EMSL/RTP)	1.161 m <sup>3</sup> /min	1.104 m <sup>3</sup> /min
Retention	50	ASTM Method D2986-91	None	99.95%
Visual	525	AREAL Visual Inspection Test Procedure a. Defect Filters b. Reject Filters	90 22	None None

### D. Distribution

After the acceptance testing is completed on the new batch of filters, the contractor shall distribute approximately 33,000 glass fiber filters and approximately 108,000 quartz filters as soon as the testing has been completed and the filters are determined to be acceptable to EPA.

The glass fiber and quartz filters shall be shipped by the contractor after

transferring the appropriate number of filter boxes from the manufacturer's shipping cases to boxes provided by the contractor for distribution of the filters to the State/local air pollution control agencies nationwide. The contractor shall never ship a partial box, and the smallest quantity of filters to be shipped to any location shall be one box. EPA will provide to the contractor a master letter and copies of the letter to include one copy in each shipment to the agencies.

After the filters for CY-2003 are distributed, it is anticipated that approximately 5,400 quartz and 3,700 glass filters will remain. The contractor shall store the remaining filters until the PO notifies the Contractor in writing to either (a) send to State/local agencies whose filters were damaged in shipment, or (b) to dispose of them.

If a State/local agency receives the filters from the Contractor in a condition where contamination is suspected due to a shipping mishap and the Contractor is notified, the Contractor shall immediately notify the EPA to get written consent to ship another set of filters to the participant.

#### IV. Deliverables

- A. The contractor shall submit all test results to the EPA within 5 days after completing the accepting testing procedures.
- B. The contractor shall ship the filters to the designated State/local agencies within 5 days after notification.
- C. The contractor shall store the remaining filters for up to 24 months.